



## Position Description

<b>Title of this position</b>	Research Scientist
<b>Business Unit</b>	Technology Delivery Group
<b>Location</b>	Kwinana
<b>Incumbent's Name</b>	
<b>Supervisor's Title</b>	
<b>Supervisor's Name</b>	Residue Development Manager
<b>Date prepared</b>	February 2003
<b>Hay Evaluation</b>	
<b>Job Grade</b>	

The Research Scientist is accountable for planning and implementing chemistry based research and development programs aimed at improving the efficiency, productivity and product quality of the Alcoa World Alumina (AWA) alumina refineries.

### Core Activities

Ensures on-going improvement in AWA refinery performance through conception of innovative ideas for new or improved processes based upon the application of expertise and experience in chemistry.

Undertakes, at the direction of the Research Manager and Supervisors, the design, planning and implementation of theoretical, bench, pilot or plant scale research and development programs to determine the technical, economic and environmental feasibility of proposed process innovations.

Provides concise, accurate, critical and timely reports on findings from research work for management evaluation of potential process changes.

Contributes to laboratory and plant performance improvement by developing new or improved analytical techniques for measurement of critical Bayer plant chemical parameters.

Contributes, through technical expertise and process knowledge, to the successful multi-disciplinary implementation of TDG projects in the refineries.

Contributes to the development of TDG technical staff through technical supervision of such staff during the course of a research project.

Contributes to the health and safety of TDG staff by ensuring safe working conditions and practices.

## Explanatory Statement

The Technology Delivery Group (TDG) is located at the Kwinana Refinery but provides a technical research and development service for all areas of operation of the AWA refineries. The primary emphasis for the department is on the innovative design, development and implementation of technology, which is both economically and environmentally sound to produce an alumina product of marketable quality. This function necessitates theoretical, bench, pilot and plant scale process evaluation and consequently requires a group with expertise in fundamental chemistry, particularly that of the Bayer process, and extractive metallurgy as well as with a background in the practical chemical engineering aspects involved in the design, operation and maintenance of a Bayer refinery. Other functions of the Technology Delivery Group include provision of a technical trouble-shooting service and a specialised analytical service for all operating areas of Alcoa World Alumina.

The principal challenge of the Research Scientist position is to ensure that innovative research and development programs are designed and implemented in a timely and cost effective manner so as to maintain or improve the competitive position of Alcoa of Australia's product in the market place. A particular challenge of the position is to apply expertise in fundamental chemistry to the development of new or improved analytical procedures for use in improving the quality of chemical data generated by TDG and plant laboratories, the efficiency and productivity of the laboratories, and the performance of the AWA refineries.

The incumbent would be expected to commence a research project with a theoretical study emphasising previous internal and external work in the field and then progress through bench, pilot or plant scale process evaluation as dictated by the nature and scope of the project. The incumbent would be responsible for determining the investigative approach to be used, preparing relevant process and equipment design criteria, organising engineering design, construction and commissioning of laboratory equipment, preparing relevant operating and safety instructions, and finally implementing the program. During implementation of the program, the incumbent would technically supervise research officer and analytical staff assigned to the project by the Research Supervisor. Sound technical evaluation and interpretation, as well as timely reporting, of experimental results are essential functions of the position. The incumbent would be expected to organise, under the direction of the Research Manager, research programs for either joint or independent research with external agencies such as universities, chemical laboratories or instrument manufacturers. Sound on-going management by the incumbent of such projects is essential for external research to be both timely and cost effective.